



RCA Amateur Radio Club

Indianapolis, IN

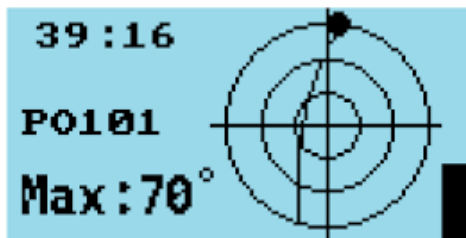


ARRL Affiliated Club
www.w9rca.org

THE NEXT MEETING OF THE RCA AMATEUR RADIO CLUB WILL BE TUESDAY, OCTOBER 11, 6:30 PM AT NORTH SIDE EVENTS, FORMERLY THE KNIGHTS OF COLUMBUS, 2100 EAST 71st, INDIANAPOLIS, IN

RCA ARC NEWS

SEPTEMBER MEETING SUMMARY – Thanks to all who attended the Sept. meeting. Field Day was discussed. The final results for 2022 will be in the December QST. RCA ARC will probably participate with the Indy United group again next year. Greg, K0GAH, reported local Boy Scouts are considering doing a FD operation next year. The propagation conditions were not so good for the recent VHF contest. Sunspot numbers are already above for the predicted high for this sunspot cycle. The remote repeater for the '88 repeater, at IVY Tech, will need to have the 2m receive antenna replaced. In the mean time, the site is working properly. Dave, N9KT, showed his GD77 DMR handheld radio (see below) modified with open source firmware which does satellite prediction, tracking, current azimuth – elevation, up link and down link frequencies, including doppler shift correction on both frequencies, etc. See "[Open GD77 Satellite ...](#)" on this web site.



The polar view graphic shows the path of the satellite shown as a plan view from vertically above the location of the radio, with the outside circle being the horizon, and the two inner circles being 30 deg and 60 deg and the center being directly overhead the location. When the satellite is currently below the horizon, a large dot is shown where the satellite will appear on the horizon. If the satellite is above the horizon, the dot shows the current position of the satellite.

AMATEUR RADIO LICENSE TEST SESSION

Date: Saturday, October 8, 2022
Time: Starting at 12:00 pm **by appointment only.**
Location: Salvation Army EDS Training Facility, 4020 Georgetown Rd
Indianapolis, IN 46254-2407
Contact: Ken Bandy email: kj9b@arrl.net

Required: FCC FRN and a completed NCVEC 605 license application form.

HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

Salvation Army Open Net, Thursday, 7PM, W9RCA repeater, 146.88 MHz, tone 88.5 HZ

Oct 8 Hoosier Hills Hamfest <http://www.w9gyq.org/pdf/hamfest-flyer.pdf>
Oct 17-24 ARRL School Club Roundup <http://www.arrl.org/school-club-roundup>
Oct 29-30 CQ WW SSB <http://www.cqww.com/rules.htm>
Nov 12-13 WAE RTTY <https://www.darc.de/der-club/referate/conteste/wae-dx-contest/en/>
Nov 5-7 ARRL SS CW <http://www.arrl.org/sweepstakes>
Nov 19-22 ARRL SS SSB <http://www.arrl.org/sweepstakes>
Nov 19-20 Ft Wayne Hamfest <http://www.acarts.com/hfmain.htm>

WA7BNM expanded contest calendar, <https://www.contestcalendar.com/contestcal.htm>

FCC GRANTS AN ARRL EMERGENCY REQUEST TO PERMIT HIGHER DATA RATE TRANSMISSIONS FOR HURRICANE RELIEF COMMUNICATIONS

The Federal Communications Commission (FCC) has granted an ARRL emergency request for a 60-day temporary waiver intended to facilitate amateur radio emergency communications for hurricane relief. The waiver was adopted on Tuesday, September 27, 2022, and immediately permitted amateur radio operators supporting amateur data transmission for Hurricane Ian traffic to employ a higher symbol rate for data transmissions than the current limit of 300 baud.

In its Order (DA 22-1011), the FCC concluded “that granting the requested waiver is in the public interest. Puerto Rico was recently hit by Hurricane Fiona and Hurricane Ian is predicted to cause significant damage, including disruption to electricity and communications services. Thus, to accommodate amateur radio operators assisting in the recovery efforts, we grant the ARRL’s waiver request for the period of 60 days from the date of this Order to operate in any parts of the United States and its territories impacted by hurricanes. The waiver is limited to amateur radio operators in the United States and its territories using publicly documented data protocols that are compatible with FCC rules, with the exception of the data rate limit waived here, for those directly involved with HF hurricane relief communications.”

ARRL’s request stated that trained amateur radio operators are working with emergency management officials and relief organizations to assist with disaster relief communications in anticipation of the arrival on the Gulf Coast of Hurricane Ian. ARRL sought the waiver for Amateur Radio Emergency Service® (ARES®) volunteers, and other amateur radio support groups working with federal, state, and local emergency management officials to assist with disaster relief.

Pursuant to ARRL’s request and similar to written waivers granted by the FCC in earlier years, to qualify, a protocol or mode exceeding the 300 baud symbol rate limit must (1) be publicly documented, (2) use no more bandwidth than the currently permissible slower protocols (generally accepted to be the bandwidth of an SSB signal, or 2.8 kHz), and (3) be used *solely* for communications related to hurricane relief.

Section 97.307(f) of the FCC’s rules prevents the use of certain protocols capable of higher data rate emissions in the High Frequency (HF) bands that many amateur stations active in emergency communications preparedness are capable of using. ARRL described that equipment they plan to use exceeds the 300 baud symbol limit and that the higher data rates are critical in sending relief communications. Many use radio modems and personal computers capable of using digital protocols and modes that would permit faster messaging rates than normally permitted under the FCC’s rules. ARRL pointed out that higher data rates can be critical to timely transmission of relief communications, such as lists of needed and distributed supplies.

ARRL also explained that radio amateurs using higher-speed emissions for hurricane-related messages in the US and its territories must be able to communicate with similar stations in the US. They may also need the ability to communicate with Caribbean-based stations that are directly involved with hurricane relief efforts. Additionally, amateurs must be able to communicate with federal stations on the five channels in the 5 MHz band involved with the SHARES network and other interoperability partners on those frequencies.

ARRL also pointed out that the past FCC temporary waivers have allowed such protocols in similar events, including Hurricanes Maria, Dorian, Laura, and Ida, typhoon relief communications in Hawaii, and wildfires in the western areas of the US.

In 2016, in response to an ARRL petition for rulemaking, the FCC proposed to remove the symbol rate limitations. It tentatively concluded that such limitations had become unnecessary due to advances in modulation techniques and they no longer served a useful purpose. That proceeding, WT Docket 16-239, is still pending.

AMATEUR RADIO OPERATORS CONTINUE RESPONSE TO IAN

As Hurricane Ian, now a tropical storm, makes its way across Florida and north into the Carolinas, amateur radio operators continue to provide communications support for weather updates and requests for assistance.

The hurricane made landfall at 3:00 PM Eastern Time on Wednesday, September 28, 2022, just south of Tampa, Florida, as a Category 4 hurricane with winds of 150 miles per hour. Millions of residents are without power, and damage was reported as extensive along the storm's initial path.

ARRL Director of Emergency Management Josh Johnston, KE5MHV, has been in regular contact with ARRL Section Managers and Section Emergency Coordinators in Florida and throughout the southeastern US. Johnston said ARRL is also in touch with national-level partners, including FEMA and the Cybersecurity & Infrastructure Security Agency (CISA), should any requests for direct emergency communications via amateur radio be needed.

Johnston said many ARRL Amateur Radio Emergency Service® (ARES®) volunteers and their groups are involved across Florida, Georgia, and South Carolina. "Many ARES groups throughout Florida have been in a state of readiness since before the weekend," said Johnston. "These amateur radio volunteers are well-connected with their state and local emergency management partners in government and non-government organizations." Johnston also said that there are ARES members, at the request of the Florida Division of Emergency Management, serving in the state Emergency Operations Center. Many ARES groups are also operating in several shelter locations.

ARRL has previously deployed Ham Aid kits in the region. The kits include amateur radio equipment for disaster response when communications equipment is unavailable.

W1AW, the Maxim Memorial Station at ARRL's headquarters in Connecticut, has activated its Winlink station to handle PACTOR III and IV messages and traffic, and well as its SHARES station, NCS310.

"In our [ARRL's] experience, amateur radio's response will continue to play out, sometimes even more significantly, after the storm passes and communities enter a period of recovery," said Johnston. "As needs are assessed, such as disruptions to power and communications, our ARRL Section leaders and ARES groups may receive additional requests for more activations and deployments."

Bobby Graves, KB5HAV, Net Manager for the Hurricane Watch Net (HWN), said the net is now transitioning from receiving weather data to gathering post-storm reports (read "Hurricane Watch Net Update for Ian," ARRL News, 9/29/2022).

"These reports include damage and areas that are flooded," said Graves. "This gives the forecasters additional information they need. Also, since FEMA has an office in the National Hurricane Center (NHC), they look over these reports to get a bigger picture of what has happened, which in turn helps them to get help and humanitarian assistance where it is needed."

Graves added that the HWN will be assisting with emergency, priority, and any Health and Welfare Traffic. The net may continue operations for days. The HWN will issue an after-action report to detail the number of amateur radio operators who participated on the net. --ARRL

AMSAT OUTLINES TRACKING FOR ARTEMIS I MOON MISSION USING "WELCOME" BEACONS

When NASA's Artemis I rocket launches for its mission to the moon this month, you'll be able to track it using 70-centimeter beacons known as Outstanding MOon exploration TEchnologies demonstrated by NAno Semi-Hard Impactors (OMOTENASHIs).

Omotenashi is Japanese for welcome or hospitality, and it describes the 70-centimeter beacons as small spacecraft and semi-hard landers of the 6U [CubeSat](#) format which will demonstrate low-cost technology to land and explore the lunar surface. OMOTENASHI will be one of 10 CubeSats to be carried with the Artemis I mission.

Brian Wilkins, KO4AQF, says that with the Artemis Real-time Orbit Website (AROW), anyone with internet access can pinpoint where Orion is and track its distance from the Earth, its distance from the moon, the mission duration, and more. AROW is available on [NASA's](#) website and Twitter account. AROW visualizes data collected by sensors on Orion that are sent to the Johnson Space Center's Mission Control Center in Houston during its flight. It will provide periodic real-time data beginning about 1 minute after liftoff through the separation of the Space Launch System (SLS) rocket's Interim Cryogenic Propulsion Stage, approximately 2 hours into flight.

Once Orion is flying on its own, AROW will provide constant real-time information. On the web, users can follow AROW to see where Orion is in relation to the Earth and the moon, and follow Orion's path during the mission. Users can view key mission milestones and characteristics on the moon, including information about landing sites from the Apollo program. Also available for download will be an ephemeris, which provides trajectory data from the flight.

AROW will also provide a set of Orion's state vectors -- data that describes precisely where Orion is in space and how it moves -- for inclusion in these tweets once Orion is flying on its own. These vectors can be used for data lovers, artists, and creatives to make their own tracking app, data visualization, or anything else they envision. For more information, read <https://www.nasa.gov/feature/track-nasa-s-artemis-i-mission-in-real-time/>.

AMSAT member Joe Fitzgerald, KM1P, adds a second online tool, called Horizons. The JPL Horizons online solar system data and computation service provides access to key solar system data and flexible production of highly accurate locations for solar system objects such as asteroids, planetary satellites, planets, the Sun, and select spacecraft. Horizons is provided by the Solar System Dynamics Group of the Jet Propulsion Laboratory.

Fitzgerald says to use "OMOTENASHI" as the Target Body. You can find information and the online app at <https://ssd.jpl.nasa.gov/horizons>.-- Thanks to Brian Wilkins, KO4AQF; Joe Fitzgerald, KM1P; NASA; JPL Horizons, and AMSAT.

A CROSSBAND ACTIVATION OF NEPM, THE BATTLESHIP USS IOWA'S ORIGINAL ACTIVE CALL SIGN, IS SCHEDULED IN MEMORY OF PEARL HARBOR.

As the representative of the National Museum of the Surface Navy at the Battleship Iowa Museum in San Pedro, California, the Battleship Iowa Amateur Radio Association (BIARA) will honor the sailors and ships previously homeported in San Pedro who were attacked on December 7, 1941, with special crossband activations of NEPM on December 6 and 7, 2022. When Pearl Harbor was attacked, seven of the battleships formerly homeported in San Pedro Bay were not present. Eight Pacific fleet battleships -- the USS *Arizona*, USS *California*, USS *Maryland*, USS *Nevada*, USS *Oklahoma*, USS *Tennessee*, USS *West Virginia*, and USS *Pennsylvania* -- were at Pearl Harbor and absorbed the brunt of the Japanese attack. Of these eight ships, three sank, one capsized, and four suffered varying degrees of damage. Under the authority of the Navy and Marine Corps Spectrum Office Southwest, they will transmit using the *Iowa*'s NEPM call sign on assigned military frequencies and listen for calls from the amateur radio community in their adjacent bands. NEPM will transmit on 14.375 MHz, 18.170 MHz, and/or 21.460 MHz on J3E upper sideband and/or A1A CW. The operator will advise listeners as to where they are listening. Amateur participants are reminded not to transmit on the NEPM military

104-YEAR-OLD HAM IS ON THE AIR

ARRL member Oscar Norris, W4OXH, of Gastonia, North Carolina, will turn 105 on September 25, 2022, and he is still on the air.

Norris lost his sight when he was 24 in 1942, and it was his blindness that led him to amateur radio. He earned his license in 1949, and has been on the air for 73 years.

Tony Jones, N4ATJ, has known Norris since he was 14 and remembers the first time he met Norris. It was at a bicycle shop and Norris, blind, was still able to tear down a wheel, replace the spokes, and spin the wheel until it was balanced. Several years later, Norris gave Jones a book on how to earn an amateur radio license.

"Over the years, the book got misplaced," said Jones. "I would give anything to find that book today." Jones continued, "Oscar has the personality of one of the kindest people you would ever want to meet, and he never has an unkind word for anyone."

Norris communicates mostly using digital mobile radio (DMR) on a handheld radio, and he has been a member of the Gaston County Amateur Radio Society (GCARS), an ARRL Affiliated Club, since 1979.

In honor of his 105th birthday, GCARS members will be operating the special event station N1O from 00:01 UTC on September 20 through 20:00 UTC on October 1. Operations will be on the HF bands, 2 meters, 1.25 meters, and 70 centimeters. Modes used will be CW, SSB, FT4, FT8, DMR, and D-STAR.

AMATEUR RADIO HELPS DISABLED SAILBOAT TO PORT

On September 7, 2022, Jeanne (Jan) Socrates, VE0JS/MM / KC2IOV, and her sailboat, the SV *Nereida*, set sail from Cape Flattery, the northwestern most point of the contiguous US. She was on her way to visit friends in San Francisco, California, but 2 days of 35 knot winds and storms left her sailboat disabled and her onboard radio equipment marginally operational. Amateur operators in New Mexico, California, and Canada, and members of Group 7.155 heard her requests for assistance.

Gil Gray, N2GG, was able to contact Socrates on 40 meters. "Her power was extremely low, and she was unable to communicate on 14.300 MHz to notify the monitoring group on that frequency," said Gray. "She needed help with wind and sea conditions, and tidal data for San Francisco Bay," he added.



Low-power output on the HF radio made it very difficult to get Q5 copy, which would typically be Q2 or Q3. With the help of several software-defined radio (SDR) operators in Utah, California, and Maui, Hawaii, they were able to glean enough copy to understand her situation and answer questions for her navigation.

Jeanne (Jan) Socrates, VE0JS/MM/
KC2IOV, and her sailboat, the *Nereida*.

Gray; Jonathan Ayers, AI6NA, and Edwin E. Jenkins, K6EXY, are all experienced sailors. They were able to make periodic contact with Socrates and give her updated wind reports. Their last contact was on Monday, September 12, at 11:00 AM (MSDT). By this time, Socrates was sailing with only the forward sail on her 38-foot sloop. Fortunately, a "following wind" kept her moving without a mainsail. As she approached the Golden Gate Bridge, Socrates was able to use the tidal information passed on by amateur radio operators to make it safely to Berkeley Marina in San Francisco Bay.

"I wouldn't call it a rescue," said Socrates, "just good amateur radio assistance -- and I'm grateful for their help."

Socrates is 81 years old and the oldest person to have ever sailed around the world unassisted. Once her sailboat is repaired, she will sail again, not for records, but for the enjoyment of sailing the high seas.

Her situation is one of three events in early September in which amateur radio was able to provide emergency assistance.

GIRL SCOUTS RECEIVE ARRL RADIO AND WIRELESS TECHNOLOGY PATCHES

On Saturday, September 10, 2022, the York County Amateur Radio Society (YCARS) in Rock Hill, South Carolina, helped 22 Girl Scouts earn their ARRL Radio and Wireless Technology patch.

Created in 2016, the [Radio and Wireless Technology Patch Program](#) offers Girl Scouts opportunities to learn about wireless technology, including amateur radio. Girl Scouts are encouraged to participate in activities that help them gain knowledge and skills in careers and subjects that involve science, technology, engineering, and mathematics (STEM).

The program activity was part of the Girl Scouts Love State Parks annual event. YCARS Outreach Coordinator Vicki Carnes, AD3I, and six other club members presented the program. Other amateur radio operators were available to help the Girl Scouts get on the air and communicate using amateur radio.

Carnes said some of the most enjoyed activities included a hands-on demonstration of Lenz's law that used copper tubing and a magnet, making and using tin cans with string telephones, and coding and decoding words using the phonetic alphabet. The breakdown for the Girl Scouts participating were: 11 Brownies, four Juniors, four Cadettes, two Seniors, and one Ambassador.

Carnes said YCARS is very involved in the Amateur Radio Emergency Service® (ARES®), and it was an honor to play a small part in these Girl Scouts' journeys through Girl Scouts of the USA. Engaging their members by getting involved with ARES, Girl Scouts, and other charitable organizations is just one way that YCARS serves its community. Read "Club Station" in the September 2022 issue of *QST* for more information about how YCARS has rebuilt itself into

being an active club, and other ways that they engage their membership by way of public service.

"ARRL is eager to encourage opportunities to involve scouts with ham radio," said ARRL Education and Learning Manager Steve Goodgame, K5ATA. "Congratulations to YCARS and the Girl Scouts for an outstanding activity," he added.

AMATEUR RADIO MAKES THE CONNECTION TO SAVE LIVES IN WISCONSIN AND IDAHO

The following two rescue stories are great examples of why amateur radio is important. The first story occurred in Wisconsin and is told by ARRL member Scott Strecker, KG9IV. In his own words, Strecker shares how he was able to help a ham in distress. Thanks to the Chippewa Valley Amateur Radio Club in Wisconsin, an ARRL Affiliated Club, for this information.

"It was Friday, September 2, 2022, which meant I worked from my home office. I have the VHF radios on low to monitor them in the background. Recently, I got into the Allstar node with a hotspot. I use it to monitor the FM38 systems (Allstar 2495) in the southern [part] of Wisconsin.

At about 7:45 AM, I heard the Allstar node come up. An individual in distress was asking for assistance to get an ambulance to him. It was a ham in Brown Deer, Wisconsin. He had slipped on his bathroom floor and went down so hard he could not get up, but he happened to have his handheld with him (don't we all). He did not have access [to the] phone, and he lived alone.

[I called the] Brown Deer police call center. The dispatcher got the fire department rolling and then started asking me for more details. I had the dispatcher on speaker phone, and he could hear the hams' responses to the questions. Being on a handheld and [lying] prone, the signal was, at times, noisy. At that time, both the other ham and I used ITU phonetics to get the exact info out. All those times practicing on the ARES® nets made it second nature. The dispatcher was also able to understand the info without my having to repeat it.

It felt good to help out. I also realized it was due to my monitoring that I was able to hear his call. If you are not participating in the weekly local ARES net, I would encourage you to do so when you can."

In addition to Strecker's story, newly licensed amateur radio operators Shannon Vore, KK7GVG, and CJ Bouchard, KK7GNG, also shared a rescue story. On September 3, 2022, in the Rocky Mountains in northwest Idaho, they were out for a weekend of four-wheeling in their Jeep. The area is an extremely mountainous region with no towns, very few people, no facilities, and no cell phone coverage. The nearest airfield is Horse Haven Trail, an unimproved dirt strip that's severely eroded and covered with rocks and debris.

At about 4:30 PM, Vore and Bouchard were taking a break when an approaching truck notified them of an ATV accident involving two teenage girls. The accident scene was just a few miles away, and when they arrived it was clear the teenagers were critically injured. Bouchard was unable to contact several local repeaters, but was finally able to make contact using a simplex frequency (146.420 MHz) that's popular with the hams in Coeur d'Alene, 20 miles from the accident site.

While Bouchard and an off-duty Emergency Medical Technician (EMT) were administering medical aid to the teenagers, Vore took over radio operations. The call for emergency assistance was picked up by local amateur radio operator John Tappero, K7JNT, who immediately called 911 and asked that 146.420 MHz be used only for emergency traffic. For nearly 2 hours, Vore and Tappero provided relay between the 911 dispatcher, advising the

condition of the injured and the approaching weather. Life Flight Network was unable to respond because of a severe thunderstorm immediately over the rescue site.

Two teams of EMT's were dispatched, but due to the mountains and the storm, they couldn't communicate with dispatch. Tappero continued to provide relay information for all parties until 6:00 PM, when the EMT's arrived. The teenagers were in stable condition and immediately transported to the nearest hospital. Today, they're in good condition and recovering.

"It took us about 2 days to wind down from the experience," said Vore. "We are both glad we had our amateur radio licenses and were able to help."

Bouchard said that they had been using radios on the General Mobile Radio System (GMRS), but have since upgraded their licenses for more operating privileges. "Because the area signals were not good, it was difficult to communicate," he continued. "So, we studied, took our exams, and are now looking forward to much more amateur radio opportunities."

Both Vore and Bouchard are now looking to join a local amateur radio club and become involved in the ARRL Amateur Radio Emergency Services® (ARES®).

--Thanks to ARRL Idaho Section Manager Dan Marler, K7REX, and Idaho Assistant Section Manager Ed Stuckey, AI7H, for their help with the Idaho rescue story.

SHORTS

The 75th anniversary of the Central Intelligence Agency (CIA) is being celebrated over a period of several months by various activities. A special event call sign, K4C/75, will be active September 16 - 30, 2022. The operators are signing K4C/75 from locations in northern Virginia to distinguish this operation from previous temporary users of the call sign. The QSL Manager is Gerard Rossano, N4JR.

Andy Clift, G6PJZ, has achieved the coveted Summits on the Air (SOTA) Mountain Goat status for reaching 1,000 activator points. His Mountain Goat-qualifying activation took place from Helvellyn in the English Lake District in Cumbria, England. Andy's SOTA journey started back in 2015, when he learned about the program by answering a CQ call from a SOTA activator. He soon activated his first summit -- Rogan's Seat in the Yorkshire Dales in England -- and started, as so many do, a keen obsession over the ensuing years. Reflecting on his achievement, Andy commented, "Without SOTA I would not do anywhere near as much walking. I would not be as active on the radio, and I would not have discovered some of the fantastic smaller Marilyn's [parts of larger mountain systems that are situated in protected areas] that people don't bother traveling to." For more information about SOTA, visit www.sota.org.uk.

THANKS FOR READING

THE RCA ARC MONTHLY NEWSLETTER IS COMPILED AND EDITED BY JIM RINEHART, K9RU AND JIM KEETH, AF9A. ALL MATERIAL CONTAINED HEREIN IS OBTAINED FROM THE SOURCES CREDITED AND EDITED FOR THIS NEWSLETTER.
